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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,851	07/30/2003	Tae-eun Kwon	1293.1901	6163
21171	7590	08/24/2007	EXAMINER	
STAAS & HALSEY LLP			CARIASO, ALAN B	
SUITE 700			ART UNIT	
1201 NEW YORK AVENUE, N.W.			PAPER NUMBER	
WASHINGTON, DC 20005			2885	
			MAIL DATE	DELIVERY MODE
			08/24/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/629,851

Applicant(s)

KWON, TAE-EUN

Examiner

/Alan Cariaso/

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7, 9, 12-24, 26 and 28-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 and 21 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 9, 12, 13, 15-20, 22-24, 26 and 28-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Receipt of applicant's response filed May 14, 2007 is acknowledged. Claims 1-3, 5, 7, 9, 12-24, 26 and 28-40. Claims 1, 7, 12, 14, 17, 18, 21-23, 26, 28, 31, 33, 34 and 37 are amended. Claims 6, 10, 11 and 25 are canceled.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3, 5, 7, 9, 12, 13, 15-20, 22-24, 26 and 28-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Amended claims 1, 7, 12, 18, 23, 31, 33, 34 and 37 commonly or similarly recite "a connective slope connecting the reflective slope to the first surface, an angle of the reflective slope with respect to the incident light being greater than an angle of the connective slope with respect to the incident light", directed to the each of the claimed grooves or reflective slopes on the first surface of the optical guide. First, it appears inaccurate to state that that any of the claimed angles of the reflective slope and connective slope is with respect to the incident light, because there are several incident

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light beams illustrated in figure 9 having various acute angles relative to the lengthwise direction. Second, there is no support in the specification that any angle of the reflective slope of indefinite reference is greater than any of the connective slope, also of indefinite reference. Third, though applicant alleges that Figure 9 shows this feature, on the contrary, it appears that Figure 9 does not illustrate this feature. Instead, figure 9 illustrates most of the reflective slopes "65" having an incline angle with the first surface "61" appearing to be less than the angle of opposite or connective slope relative to the first surface "61". And fifth, the only inclined angle described and associated with the reflective slopes in the embodiment in figure 9, is angle  $\Theta$  relative the longitudinal axis of the optical guide in figure 8. Therefore, it is further unclear if "an angle of the reflective slope" refers to a different angle other than varying angle  $\Theta$ , and if so has no clear description of this angle regarding the embodiment in figure 9 and it being greater than an or any angle of the connective slope of figure 9.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. As best understood given the lack of clarity in the claims as rejected above, claims 1-3, 5, 7, 9, 23, 24, 26, 28, 29, 31-33 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by MORI (US 4,936,663).

6. MORI '663 discloses an optical guide (1, figs.3-4) which guides light (L) incident therethrough in a lengthwise direction thereof, makes uniform the light in an effective width range of the lengthwise direction and outputs the uniform light (col.4, lines 7-10), the optical guide (1) comprising: a first surface (surface of guide 1 as viewed in fig.4) to receive the incident light (L), comprising a plurality of grooves (as viewed in one aspect of spiral groove 2 which forms plural reflective slopes respective to the first viewable surface of fig.4), each of the grooves comprising a reflective slope to reflect (col.4, lines 46-48) and make uniform the incident light, each of the reflective slopes (2) having a stripe shape (fig.4) and forming a varying angle (col.4, lines 9-10, narrowing pitch P with distance from light source forming slope portions with increasing angles w.r.t. length of guide 1) with respect to the lengthwise direction of the optical guide (fig.4), an interval between the reflective slopes being varied (P, fig.3) and a connective slope (any of the two sides forming triangles 8 in fig.6, where the two sides transverse the longitudinal axis of optical guide 1) connecting the reflective slope (2 of fig.4) to the first surface (fig.4), an angle (increasing varying angle) of the reflective slope with respect to the incident light (possibly similar to the longitudinal axis of optical guide 1) being greater than an angle (any of the base angles (fig.6) at the circumference of the optical guide 1) of the connective slope (8) with respect to the incident light (possibly similar to the longitudinal axis of optical guide 1), because varying angle of reflective slopes or

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grooves 2 is generally increasing approaching 90 degrees or approaching horizontal level as pitch P gradually becomes narrow (col.4, lines 9-10) as viewed in fig.4, while the connective angles or base angles (8) remain the same acute angle(s); and a second surface (non-viewable but behind the viewable surface of guide 1 that at least completes the rod surface), which is opposite to the first surface (fig.4) and is an output surface from which the light reflected from the reflective slopes is output, wherein the respective angles formed by respective lengths of the reflective slopes (2) with respect to the lengthwise direction gradually becomes become larger when moving further from a side of the guide (figs.3-4) onto which the light is incident (L); wherein the plurality of reflective slopes (2) are formed so that an interval (P, fig.3) between the reflective slopes is varied; wherein the interval (P, fig.3) between the reflective slopes (2) gradually becomes smaller (figs.3-4) when moving further from a side of the guide onto which the light is incident (L); further comprising a groove (2) having a triangular structure (fig.6) and a stripe shape (fig.4), the groove forming the reflected slopes (2); wherein the plurality of reflective slopes (2) have a uniform width (as it appears in figs.3-4); further comprising a groove (2) on the first surface having a triangular structure (fig.6) and a stripe shape and, the groove forming the reflective slopes; and a slope (any one of the two sides forming triangles 8 in fig.6, where the two sides transverse the longitudinal axis of optical guide 1) which connects the reflective slopes (2) to a portion of the first surface along the lengthwise direction and has a width (height or horizontal component of triangles 8 in fig.6) greater (deepening of the groove col.4, lines 11-12) than a width of the reflective slopes (vertical component side which forms the base of

triangles 8 in fig.6), which forms an incline with respect to the lengthwise direction; wherein the reflective slopes (2) are formed to have a width (any one of the two sides forming triangles 8 in fig.6, where the two sides transverse the longitudinal axis of optical guide 1) that gradually becomes greater when moving closer to a side onto which the light is incident (deepening of the groove col.4, lines 11-12) and therefore, gradually becomes smaller when moving further from the side onto which the light is incident; further comprising a side (junction where optic fiber/cable 14 ends and 1a begins in figs.7-8) between the first and second surfaces, the side comprising a groove (1c, fig.7) to receive a source of the incident light; further comprising a cover (9, figs. 7-8) to cover the light source (14); wherein the reflective slopes (2, fig.4) are formed by a plurality of grooves (fig.4) having a triangular cross section and a depth of the grooves (2) increases with decreasing distance from a source of incident light (col.4, lines 10-12); given the structure, wherein it is capable of providing a reflectivity of the optical guide (1) that decreases with decreasing distance from a source of the incident light (L); and given the rod guide (1) has from a front and back surfaces, then it inherently has quadrant third and fourth surfaces between the first (front) and second (back) surfaces, wherein each of the lengths of the slopes (2) extends from the third surface to the fourth surface (fig.4).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over MORI (US 4,936,663) in view of MORI (US 4,585,298).

9. MORI '663 discloses the claimed invention except portions of the slopes overlap when projected on an axis in the lengthwise direction of the optical guide. MORI '298 teaches light diffusing or reflecting spiral patterns (20, fig.4) or spiral grooves (20', fig.7) that overlap adjacent patterns or grooves on the same face side for the purpose of radiating light from the conducting member with selective quantity distribution (col.1, lines 52-65) and one selected distribution in fig.3. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the light guide device of MORI '663 to include the type of overlapping portions as taught by MORI '298 in order to select a quantity distribution of light in the longitudinal direction of the light guide that would include at least even light quantities with distance away from the light source avoiding any gaps where distribution may vary less.

#### ***Allowable Subject Matter***

10. Claims 14 and 21 are allowed.

#### ***Response to Arguments***

11. Applicant argues that Mori '663's spiral groove has sides at a same angle with respect to the incident light shown in figure 4, and alleges that Mori '663 does not



disclose the claimed connective slope, relying on applicant's fig.9 to illustrate this claimed feature. As rejected for inadequate description, the claims are interpreted and read as best understood. The Office Action set forth shows how Mori meets the limitations as amended.

12. Applicant has not argued against the rejection of claims 12, 13, 17-20, 22 and 34-39 as being unpatentable over Yokomori '588 in view of Redmond '862. However, these claims as amended has been considered in light of the prior art to at least Yokomori and Redmond, and they are found not suggesting the angle of the reflective slope with respect to the incident light being greater than an angle of the connective slope with respect to the incident light. Therefore, this rejection is withdraw.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Alan Cariaso/ whose telephone number is (571) 272-2366. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Lee can be reached on (571) 272-7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 Alan Cariaso/  
Primary Examiner  
Art Unit 2885

August 20, 2007  
AC